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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,711	11/11/2003	Jung-Hong Ahn	SUN-0032	5493

7590 05/25/2006

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EXAMINER

CHOW, DOON Y

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/705,711	Applicant(s) AHN, JUNG-HONG	
	Examiner Dennis-Doon Chow	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,9 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1 and 4 are rejected under 35 U.S.C. 102(a) as being anticipated by applicant's admitted prior art (pages 1-4; and Figs. 1-2).

The prior art discloses a method for calculating a movement value of an optical mouse comprising the steps of: calculating a movement value, wherein the step of calculating the movement value selects a reference frame (page 3, lines 1-4), setting a reference area from the reference frame (12a, Fig. 2), and finds a correlation between a current input frame and the reference area of the reference frame (page 3), and resetting a reference area, wherein the step of resetting the reference area sets a new reference area (page 3, lines 17-20) to which the reference area of the reference frame is moved by considering the movement value calculated in the step of calculating the movement value (13a, Fig. 1). The admitted prior art inherently teaches adjusting a reference frame update speed based on a movement speed of the optical mouse so that the reference frame can be updated properly.

Claim Rejections - 35 USC § 103

3. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Crane et al. (6664948).

Regarding to claim 9, the admitted prior art discloses an optical mouse comprising: an image sensor (3, Fig. 1) that obtains a surface image of a sample frame and outputs the surface image in pixel; and an image data processor that finds a correlation between a sample frame and the reference area of a reference frame to calculate a movement value and sets a new reference area to which the reference area of the reference frame is moved by considering the calculated movement value (pages 3-4).

The admitted prior art does not disclose an A/D converter for converting the output to a digital signal.

Crane, in the same input field, discloses connecting an A/D converter (90, Fig. 3) to an image sensor to convert image sensor output to a digital signal.

It would have been obvious to one of ordinary skill in the art to use Crane's A/D converter to convert the output of the image sensor of the admitted prior art so that the output of the image sensor can be converted to digital signal.

Regarding to claim 12, the admitted prior art further teaches updating a first frame (reference frame 12a, Fig. 2) and second frame (current frame 13aa, Fig. 2), and inherently teaches adjusting a reference frame update speed based on a movement speed of the optical mouse so that the reference frame can be updated properly.

Allowable Subject Matter

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4. Claims 2-3, 5-8, 10-11, and 13-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

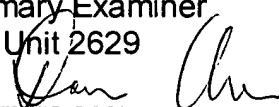
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis-Doon Chow whose telephone number is 571-272-7767. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D. Chow
Mary 18, 2005

Dennis-Doon Chow
Primary Examiner
Art Unit 2629


DENNIS-DOON CHOW
PRIMARY EXAMINER